

CUSTOMER SUPPORT SYSTEM: AN EMAIL TO THE CUSTOMER

Automated Comment, Email Subject, Summary,
Sentiment Analysis, & Email Generation

Presented By : YIN YIN PHYO

San Francisco Bay University | 2024

TABLE OF CONTENTS

- **Introduction**
- **Design**
- **Installation**
- **Implementation**
- **Sample Output**
- **Conclusion**

INTRODUCTION

- This project is designed to automate the generation of customer comments, email content, summaries, and sentiment analysis based on input related to products.
- By leveraging AI through the OpenAI API and Flask as the backend framework, the system simplifies the customer communication process.
- The user inputs product details, and the system generates a comment, email subject, summary, and email based on AI techniques like Inferring, Transforming, and Sentiment Analysis.



DESIGN

1

Frontend: HTML form (index.html).

2

Backend: Flask handles logic and AI integration.

3

OpenAI: Generates comments, summaries, sentiment analysis, and email content.

5

INSTALLATION

● Create Virtual Environment

- `python3 -m venv myenv`
- `source myenv/bin/activate`

● Install Flask and OpenAI

`pip install flask openai`

● Organize Project Structure

`app.py`, `templates (index.html)`, `static (optional)`

IMPLEMENTATION

- **Step 1: Generate Customer Comment**
 - The user inputs product details, and the system generates a customer comment using AI techniques.
- **Step 2: Generate Email Subject**
 - AI analyzes the customer comment and produces a relevant subject for the email.
- **Step 3: Generate Summary**
 - A brief summary (30 words or less) of the customer comment is generated.
- **Step 4: Sentiment Analysis**
 - The system performs sentiment analysis to determine if the comment is positive or negative.
- **Step 5: Generate Email**
 - An email is created based on the comment, subject, summary, and sentiment.
- **Step 6: Translation**
 - The generated content can be translated into different languages based on the user's selection.

SAMPLE OUTPUT

● Choose Language Options

EnglishSpanishPortugueseBurmese✓ ChineseKorean

Translate Comment in selected language: ☐ Translate Email in selected language: ☐

Process

<p>Comment:</p> <p>我对这家公司提供的高质量电子产品范围印象深刻。从功能强大的笔记本电脑和智能手机到沉浸式电视和游戏机，每个人都能找到适合自己的产品。创新的功能、时尚的设计和有竞争力的价格使这些产品在市场上脱颖而出。保修选项提供了安心，优秀的评分反映了客户的满意度。总的来说，我信任这个品牌满足我所有的电子需求，知道我会得到提升数字体验的顶级产品。</p>	<p>Subject of the email:</p> <p>Subject: Impressed by the Wide Range of High-Quality Electronics Offered</p>	<p>Summary of the comment:</p> <p>Customers appreciate the diverse range of high-quality electronics offered by the brand, with innovative features, sleek designs, competitive prices, and excellent customer satisfaction ratings.</p>	<p>Sentiment:</p> <p>Positive</p>	<p>Email:</p> <p>Subject: Thank You for Your Appreciation of Our High-Quality Electronics! Dear Valued Customer, I hope this email finds you well. I wanted to personally reach out and express my gratitude for your kind words regarding our wide range of high-quality electronics. Your feedback is truly appreciated, and it motivates us to continue providing top-notch products and services to our customers. We are thrilled to hear that you find our laptops, smartphones, TVs, and gaming consoles impressive, with their innovative features, sleek designs, and competitive prices. We take pride in offering a diverse selection of electronics that cater to the needs and preferences of our customers. Furthermore, I'm delighted that you have found peace of mind in our warranty options and that our excellent customer satisfaction ratings have resonated with you. Your trust in our brand for all your electronic needs means a lot to us, and we are committed to delivering products that enhance your digital experience. If you have</p>
--	---	---	--	--

SAMPLE OUTPUT

● Non-English - English

Choose the language of Email to be generated:

Chinese

Translate Comment in selected language: ☐ Translate Email in selected language: ☐

Process

<div>Comment:</div> <p>我对这家公司提供的高质量电子产品范围印象深刻。从功能强大的笔记本电脑和智能手机到沉浸式电视和游戏机，每个人都能找到适合自己的产品。创新的功能、时尚的设计和有竞争力的价格使这些产品在市场上脱颖而出。保修选项提供了安心，优秀的评分反映了客户的满意度。总的来说，我信任这个品牌满足我所有的电子需求，知道我会得到提升数字体验的顶级产品。</p>	<div>Subject of the email:</div> <p>Subject: Impressed by the Wide Range of High-Quality Electronics Offered</p>	<div>Summary of the comment:</div> <p>Customers appreciate the diverse range of high-quality electronics offered by the brand, with innovative features, sleek designs, competitive prices, and excellent customer satisfaction ratings.</p>	<div>Sentiment:</div> <p>Positive</p>	<div>Email:</div> <p>Subject: Thank You for Your Appreciation of Our High-Quality Electronics! Dear Valued Customer, I hope this email finds you well. I wanted to personally reach out and express my gratitude for your kind words regarding our wide range of high-quality electronics. Your feedback is truly appreciated, and it motivates us to continue providing top-notch products and services to our customers. We are thrilled to hear that you find our laptops, smartphones, TVs, and gaming consoles impressive, with their innovative features, sleek designs, and competitive prices. We take pride in offering a diverse selection of electronics that cater to the needs and preferences of our customers. Furthermore, I'm delighted that you have found peace of mind in our warranty options and that our excellent customer satisfaction ratings have resonated with you. Your trust in our brand for all your electronic needs means a lot to us, and we are committed to delivering products that enhance your digital experience. If you have</p>
---	--	--	---------------------------------------	---

SAMPLE OUTPUT

● Non-English - Non-English

Choose the language of Email to be generated:

Korean

Translate Comment in selected language: ☐ Translate Email in selected language: ☐

Process

<div>Comment:</div> <div>이 회사가 제공하는 다양한 전자제품에 깊은 감명을 받았습니다. 강력한 노트북과 스마트폰부터 몰입형 TV와 게임 콘솔까지 모든 기술적 요구를 충족시킵니다. 제품 설명은 주요 기능을 강조하여 적절한 장치를 선택하기 쉽게 해줍니다. 보증 기간은 안심감을 제공하며 경쟁력 있는 가격은 고품질 제품에 가치를 더합니다. 전반적으로 업무 및 엔터테인먼트 목적으로 이 제품에 투자하는 데 자신감을 가질 수 있습니다.</div>	<div>Subject of the email:</div> <div>Subject: Impressed by the Diverse Range of Electronics Offered</div>	<div>Summary of the comment:</div> <div>Customer praises the company for its diverse electronics range, detailed product descriptions, warranty coverage, competitive pricing, and overall confidence in investing in their products.</div>	<div>Sentiment:</div> <div>Positive</div>	<div>Email:</div> <div>소중한 고객님, 안녕하세요. 이 이메일이 여러분께 잘 전달되기를 바랍니다. 저희 다양한 전자제품에 대한 긍정적인 피드백을 공유해 주셔서 진심으로 감사드립니다. 제품에 대한 칭찬, 상세한 설명, 보증 범위, 경쟁력 있는 가격, 그리고 저희 브랜드에 투자하는 믿음에 대한 여러분의 친절한 말씀은 저희에게 매우 소중합니다. [회사명]에서는 업무나 엔터테인먼트 목적에 맞는 기술적 요구를 충족시키는 고품질 전자제품을 제공하기 위해 노력하고 있습니다. 제품 설명이 도움이 되었고 보증 기간이 안심을 제공해 드려서 기쁘게 생각합니다. 여러분의 만족도가 최우선이며, 우수한 제품과 고객 서비스를 제공하기 위해 최선을 다하겠습니다. 궁금한 점이 있거나 도움이 필요하거나 제품에 대한 추가 정보가 필요하면 언제든지 연락 주시기 바랍니다. 다시 한번 여러분의 친절한 말씀과 전자제품 구매를 위해 [회사명]을 선택해 주셔서 진심으로 감사드립니다. 여러분의 지원에 감사드리며 앞으로도 더 나은 서비스를 제공하기를 기대하겠습니다.</div>
--	---	--	--	---

CONCLUSION

- This project automates the creation of customer emails, significantly reducing manual efforts in customer support.
- Future improvements could include:
 - Adding more language options.
 - Enhancing the templates for better formatting and personalization.
 - Implementing more AI-driven analysis techniques to further optimize the system.
- This solution demonstrates how AI and automation can improve customer support processes, saving time and ensuring more consistent communication.





THANK YOU